

Contributors to this Issue

F. L. RHODES, S.B., Massachusetts Institute of Technology, 1892; American Bell Telephone Company; Outside Plant Engineer, American Telephone and Telegraph Company, 1909-19; Outside Plant Development Engineer, 1919—. Mr. Rhodes has had an active part in the development and standardization of materials, apparatus and practices employed in the underground and overhead wire plant of the Bell System. He has written many articles, among which may be mentioned those on "The Telephone" in the *Encyclopedia Americana* and *Nelson's Encyclopedia*.

GEORGE CRISSON, M.E., Stevens Institute of Technology, 1906; instructor in Electrical Engineering, 1906-10. American Telephone and Telegraph Company, Engineering Department, outside plant division, 1910-14; transmission and protection division, 1914-19; Development and Research Department, transmission development division, 1919—.

W. H. HARDEN, B.E.E., University of Michigan, 1912; Engineering Department, American Telephone and Telegraph Company, 1912-1919; Department of Operation and Engineering, 1919—. Mr. Harden has been engaged in the development of transmission maintenance testing methods and in the preparation of routines and practices required for applying these methods in the telephone plant.

K. S. JOHNSON, A.B., Harvard University, 1907; Graduate School of Applied Arts and Sciences, 1907-09; Engineering Department of the American Telephone and Telegraph Company, 1909-13; Engineering Department, Western Electric Co., Inc., 1913-24; Bell Telephone Laboratories, Inc., 1925—. Mr. Johnson's work has related especially to the theoretical aspects of telephone and telegraph transmission.

TIMOTHY E. SHEA, S.M., Massachusetts Institute of Technology, 1919; instructor in Electrical Engineering and Physics, 1918-20; Manufacturing Department, Western Electric Company, 1920-21; Engineering Department, 1921-24; Apparatus Development Department, Bell Telephone Laboratories, 1925—. Mr. Shea has been principally engaged in the development of electric wave filters and allied apparatus.

KARL K. DARROW, S.B., University of Chicago, 1911; University of Paris, 1911-12; University of Berlin, 1912; Ph.D., in physics and mathematics, University of Chicago, 1917; Engineering Department, Western Electric Company, 1917-24, Bell Telephone Laboratories, Inc., 1925—. Mr. Darrow has been engaged largely in preparing studies and analyses of published research in various fields of physics.

W. V. WOLFE, B.S., Carnegie Institute of Technology, 1918; Signal Corps, 1918-19; General Electric Company, 1919; Standard Underground Cable Company, 1920; Engineering Department, Western Electric Company, 1920-24; Bell Telephone Laboratories, Inc., 1925—. Mr. Wolfe has been engaged in the development of various types of carrier systems.